

AMENDMENTS TO THE CLAIMS

1. (Original) A radio communication apparatus that is applied to a radio communication system and communicates with other radio communication apparatus in the radio communication system using one available channel or a plurality of channels, the radio communication apparatus comprising:

a reception processing unit that, when input reception signals of the channels of the radio communication system is received, measures reception states of input reception signals of each of the channels, generates local channel reception information of each of the channels based on a result of the measurement, and applies a reception processing to the input reception signals to generate decoded signals;

a media-access-control unit that, when data is transmitted using two or more channels, generates transmission frames for each of the channels using transmission data;

a transmission processing unit that generates radio signals including each of the transmission frames; and

a channel-information processing unit that generates local feedback information based on the local channel reception information, and inserts the local feedback information generated into one of the radio signals or a plurality of the radio signals, wherein

the radio communication apparatus transmits the radio signals including the local feedback information.

2. (Original) The radio communication apparatus according to claim 1, wherein the channel-information processing unit generates the local feedback information based on the local channel reception information and resource information that is a processing load of the media-access-control unit.

3. (Original) The radio communication apparatus according to claim 1, further comprising a selector that, when the channel-information processing unit inserts the local feedback information, selects the radio signals into which the local feedback information is inserted, based on the local channel reception information.

4. (Original) The radio communication apparatus according to claim 1, wherein the reception processing unit extracts, when transmission source feedback information is inserted in each of the input reception signals by the other radio communication apparatus, the transmission source feedback information,

the media-access-control unit determines a transmission system and a transmission speed based on the transmission source feedback information extracted, and

the transmission processing unit generates the radio signals based on the transmission system and the transmission speed determined.

5. (Original) The radio communication apparatus according to claim 1, wherein

the reception processing unit extracts, when transmission source feedback information is inserted in each of the input reception signals by the other radio communication apparatus, the transmission source feedback information,

the media-access-control unit extracts a transmission source address included in the decoded signals at a time of reception, and extracts a destination address of transmission data at a time of transmission, and

the channel-information-processing-unit generates a local feedback table, in which the local channel reception information, the transmission source feedback information extracted, and the transmission source address extracted are stored corresponding to each other at the time of reception, searches through the local feedback table with the destination address as a keyword at the time of transmission to generate the local feedback information based on the local channel reception information corresponding to the transmission source address for which the transmission source address stored in the local feedback table and the destination address coincide with each other, and determines a transmission system and a transmission speed based on the transmission source feedback information corresponding to the transmission source address for which the transmission source address stored in the local feedback table and the destination address coincide with each other, and

the transmission processing unit generates the radio signals based on the transmission system and the transmission speed determined.

6. (Original) A radio communication apparatus that is applied to a radio communication system and communicates with other radio communication apparatus in the radio communication system using one available channel or a plurality of channels, the radio communication apparatus comprising:

a reception processing unit that, when input reception signals of the channels of the radio communication system is received, measures reception states of input reception signals of each of the channels, generates local channel reception information of each of the channels based on a result of the measurement, and applies a reception processing to the input reception signals to generate decoded signals;

a media-access-control unit that, when data is transmitted using two or more channels, generates local feedback information based on the local channel reception information, further generates transmission frames for each of the channels using transmission data, and inserts the local feedback information generated into one of the transmission frames or a plurality of the transmission frames; and

a transmission processing unit that generates radio signals including each of the transmission frames, and transmits the radio signals generated.

7. (Original) The radio communication apparatus according to claim 6, wherein the media-access-control unit generates the local feedback information based on the local channel reception information and resource information that is a processing load.

8. (Original) The radio communication apparatus according to claim 6, wherein the media-access-control unit extracts, when transmission source feedback information is inserted in the decoded signals by the other radio communication apparatus, the transmission source feedback information, and determines a transmission system and a transmission speed based on the transmission source feedback information extracted, and

the transmission processing unit generates the radio signals based on the transmission system and the transmission speed determined.

9. (Original) The radio communication apparatus according to claim 6, wherein the media-access-control unit

at a time of reception, extracts a transmission source address included in the decoded signals and generates a local channel reception information table in which the local channel reception information and the transmission source address extracted are stored corresponding to each other, and

at a time of transmission, extracts, when data to be transmitted is a feedback frame for notifying local feedback information, a destination address in

the feedback frame, searches through the local channel reception information table with the destination address as a keyword, generates the local feedback information based on local channel reception information corresponding to the transmission source address for which the transmission source address stored in the local channel reception information table and the destination address coincide with each other, and inserts the local feedback information generated into the feedback frame.

10. (Original) The radio communication apparatus according to claim 9, wherein the media-access-control unit

when generating the local channel reception information table, stores a time when the of the local channel reception information table is generated,

when information stored in the local channel information table is used, compares a present time the time when the of the local channel reception information table is generated,

when a difference between the present time and the time when the of the local channel reception information table is generated is within a predetermined range, generates the local feedback information based on the local channel reception information of the local channel information table, and

when the difference exceeds the predetermined range, does not generate the local feedback information.

11. (Original) The radio communication apparatus according to claim 6, wherein the media-access-control unit

when the decoded signal is a feedback frame from the other radio communication apparatus, extracts a transmission source address included in the decoded signal, extracts transmission source feedback information included in the feedback frame, and generates a transmission source feedback information table in which the transmission source address and the transmission source feedback information are stored corresponding to each other, and

at a time of transmission, extracts a destination address from data to be transmitted, searches through the transmission source feedback information table with the destination address extracted as a keyword, and determines a transmission system and a transmission speed based on the transmission source feedback information corresponding to the transmission source address for which the destination address and the transmission source address stored in the transmission source feedback information table coincide with each other.

12. (Original) The radio communication apparatus according to claim 11, wherein the media-access-control unit

when generating the local channel reception information table, stores a time when the of the local channel reception information table is generated,

when information stored in the local channel information table is used, compares a present time the time when the of the local channel reception information table is generated,

when a difference between the present time and the time when the of the local channel reception information table is generated is within a predetermined range, determines a transmission system and a transmission speed based on the transmission source feedback information of the transmission source feedback information table, and

when the difference exceeds the predetermined range, determines a transmission system and a transmission speed that are decided in advance.

13. (New) A radio communication apparatus for communicating with another radio communication apparatus, comprising:

a reception processing unit which receives an input reception signal from the other radio communication apparatus, wherein the input reception signal includes a transmission source feedback information that indicates a reception level of the other radio communication apparatus;

a media-access-control unit which determines a transmission system and a transmission speed for a transmission frame based on the transmission source feedback information; and

a transmission processing unit which generates a radio signal to be transmitted to the other communication apparatus by modulating the

transmission frame based on the transmission system and the transmission speed.

14. (New) The radio communication apparatus according to claim 13, further comprising a channel-information processing unit, wherein

the reception processing unit generates a local channel reception information based on a measured reception level or a receive signal indication of the input recognition signal,

the channel-information processing unit generates a local feedback information that indicates the reception level of the radio communication apparatus based on the local channel reception information, and

the transmission processing unit generates the radio signal by modulating the local feedback information.

15. (New) The radio communication apparatus according to claim 13, wherein

the reception processing unit generates a local channel reception information based on a measured reception level or a receive signal indication of the input reception signal,

the media-access-control unit generates a local feedback information that indicates the reception level of the radio communication apparatus based on the local channel reception information, and

the transmission processing unit generates the radio signal by modulating the local feedback information.

16. (New) The radio communication apparatus according to claim 4, wherein the transmission system is a modulation system.

17. (New) The radio communication apparatus according to claim 8, wherein the transmission system is a modulation system.

18. (New) The radio communication apparatus according to claim 13, wherein the transmission system is a modulation system.

19. (New) The radio communication apparatus according to claim 1, wherein the radio communication apparatus utilizes a MIMO transmission system.

20. (New) The radio communication apparatus according to claim 6, wherein the radio communication apparatus utilizes a MIMO transmission system.

21. (New) The radio communication apparatus according to claim 13, wherein the radio communication apparatus utilizes a MIMO transmission system, the reception processing unit receives a plurality of input reception signals, and

the transmission processing unit modulates a plurality of transmission frames.